The impact factor of open access journals:data and trends

The Impact Factor of Open Access journals: data and trends

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Abstract

In recent years, a large debate has arisen about the citation advantage of Open Access (OA). Many studies have been conducted on different datasets and according to different perspectives, which led to different and somehow contradictory results depending on the considered disciplinary field, the researchers' attitude and citational behaviour, and the applied methodology. One of the bibliometric indicators most used worldwide to measure citations is Impact Factor – not free from criticisms and reservations – but it has only been tested on Open Access journals once, in 2004.

The aim of this preliminary work, focused on "Gold" Open Access, is to test the performance of Open Access journals with the most traditional bibliometric indicator – Impact Factor, to verify the hypothesis that unrestricted access might turn into more citations and therefore also good Impact Factor indices. Other indicators, such as Immediacy Index and 5-year Impact Factor, will be tested too.

The preliminary step of the work was fixing the list of Open Access journals tracked by Thomson Reuters in «Journal Citation Reports» (JCR). JCR was compared to the Directory of Open Access Journals (DOAJ) as of 31 December of the corresponding year.

As to coverage, Open Access journals in «Journal Citation Reports» are still a small percentage, even though there has been a large increase since 2003 in the *Science* edition (from 1.47% to 5.38%), less visible in the *Social Science* edition (from 1.05% to 1.52%, with a slight decrease from the 2007 1.71%).

In order to obtain comparable data, absolute Impact Factor or Immediacy Index values were not considered, but rather converted into percentiles for each category. The rank of the Open Access journals was analyzed in each

single category. The titles were then clustered in disciplinary macro-areas, and data were aggregated.

Open Access journals in JCR 2008 *Social Sciences* edition rank in the top fifty percentiles (0-50) with a 54.5% share.

With substantial differences between macro-areas, in JCR 2008 *Science* edition Open Access journals rank in the top fifty percentiles (0-50) with a 38.62% share when considering Impact Factor, and with a 37.68% share referring to Immediacy Index. When considering 5-year Impact Factor, the share is 40.45%.

Open Access journals are relatively new actors in the publishing market, and gaining reputation and visibility is a complex challenge. Some of them show impressive Impact Factor trends since their first year of tracking. The collected data show that the performance of Open Access journals, also tested with the most traditional bibliometric indicator, is quite good in terms of citations.

Keywords: Open Access journals, Impact Factor, impact, scholarly communication, citations.

1. Impact, citations, Open Access, and Impact Factor

"Impact" in scientific communication is hard to define and moreover harder to measure. If we agree that «Science is a gift-based economy; value is defined as the degree to which one's ideas have contributed to knowledge and impacted the thinking of others» [1], we should also admit that citation count is only one of the possible impact indicators, a proxy measure referring only to the academic context. This concept is even more true in the digital era, where a great variety of new impact measures – based on social network analysis and usage log data – are under development or already in use [2]. The notion of impact as a «multi-dimensional construct» and the suggestion that usage measures actually better describe in their connections and correlations the complexity of "impact" in the scientific process [3, 4] cannot be ignored, and we expect in a future further, new functional implications of this approach [5]. The new "article level metrics" suggested by PLoS One goes straight on this pathway [6].

However, "impact" has traditionally been expressed in terms of quantitative indicators, among which Impact Factor can be considered a standard *de facto*: or, at least, it is in the Italian academic context. Impact Factor has also gained a privileged position in the research evaluation system, with all its implications. But Impact Factor is only a proxy measure, and it should be used with caution in evaluating a single article and a single researcher [7]; reasonable critics and reservations on Impact Factor have been widely discussed by different actors involved in scientific publishing, such as recently summarized by Cope and Kalantzis and by Young et al [8]. Yet, focus of this work is to test an indicator and to present raw data; therefore it will not address the question and the related debate on the value of Impact Factor in itself.

The author is interested in matching the most traditional quantitative impact indicator, Impact Factor, and «one of the most exciting and radical events in publishing in recent years» [9], i.e. Open Access. One of the most debated arguments between Open Access advocates and detractors is its alleged citation advantage, which would stem by the « free, irrevocable, worldwide, right of access» stated by the Berlin Declaration [10]. Many studies have been carried out to determine if there is an actual Open Access advantage in citations [11] and, once established, to measure its value and understand its causes. Alma Swan edited a sort of systematic review of these studies and discussed methodological and interpretive issues, starting from the point that «citability rests upon the quality, relevance, originality and influence of a piece of work» and stating that «that OA would produce an automatic citation boost for every article was never the expectation» [12]. Different selected datasets and control-cases, different measures, e.g. citations or downloads, different time-spans led to different and somehow contradictory results, depending on the considered disciplinary field, the researchers' attitude and citational behaviour, and the applied methodology [13]. Except for the two reports of Marie E. McVeigh of former ISI Thomson [14], since 2004 no more investigations have been conducted on the Impact Factor value trends of Open Access journals. The author thought it could be interesting to test again, after some years, the performance of Open Access journals in terms of citations, by applying the most commonly used quantitative indicator, Impact Factor. The author does not intend to deal with the debate about Impact Factor appropriateness or exhaustiveness, as just stated.

2. Do Open Access journals have good Impact Factor indices?

The 2009 RIN survey on *Communicating knowledge: how and why researchers publish and disseminate their findings*, shows, in addition to other fundamental findings about researchers' citing behaviour, that availability and easy access are one of the key criteria in citing an article [15]. The hypothesis the author intends to verify is that the "open" access, by raising the level of readership, might easily turn into more citations and therefore also good Impact Factor indices. Dealing with Impact Factor, this study forcedly addresses only Open Access journals – referred to as the "Gold Road" to Open Access. All the pre-prints and post-prints self-archived by authors in institutional or subject-based repositories have not been considered. They are referred to as the "Green Road", a preferential channel in early and free dissemination of research outputs, and they have been the object of recent bibliometric studies [16].

Sources of the work were:

- Thomson Reuters «Journal Citation Reports» (JCR), published every year in June, for the data about Journal Impact Factor, Immediacy Index and 5-year Impact Factor. It has a *Science* and a *Social Sciences* edition. No coverage is provided for Humanities;
- Directory of Open Access Journals (DOAJ) edited by Lund University, as the most accredited list of Open Access journals [17].

In order to define the method and in setting the research criteria, the author would have tried when possible to follow the choices of McVeigh's 2004 analysis, but it wasn't so easy partly because McVeigh, inside the former ISI, had had access to a great amount of complementary data, partly because McVeigh's sources at that time were different. In 2004 DOAJ was at the beginning, so McVeigh had to consider also SCiELO, whose titles now appear in DOAJ, and J-Stage, which also includes journals that are free on the Web, but not strictly Open Access [18].

Although the same framework has been maintained (4 disciplinary macro areas, reduction in percentiles and so on), it is hard to make a direct comparison because of the different list of titles examined and the adopted principle of inclusion [19]. In the present work, only DOAJ has been considered as a source, because with its 4,833 titles (as of March, 21st 2010) and its rigorous selection it is now supposed to be somehow an official register of Open Access journals.

3. Open Access journals coverage in Journal Citation Reports

Fixing the list of Open Access journals included in Journal Citation Reports was the first step of the work. There is no automatic filter to extract them, so the author has to achieve them by comparison.

The Impact Factor of a journal is «the average number of times articles from the journal published in the past two years have been cited in the JCR year » and it is calculated «by dividing the number of citations in the JCR year by the total number of articles published in the two previous years» [20]. JCR 2008 edition, published in June 2009, contains data about 2007 and 2006 articles' citations in 2008 journals. The author then decided to compare the titles present in DOAJ as of December, 31st of the corresponding JCR year, i.e. those on which Impact Factor has been calculated.

A query run by ISSN number gave a first automatic extraction. Then, a manual comparison drove to the inclusion of titles which for whatsoever reason had different ISSN numbers in the two sources.

The same method has been applied both within the JCR *Sciences* and *Social Sciences* editions, considering the online original version as of June, 2009. Further inclusions in the 2009 Fall revision of JCR have not been considered, in order to set a definite edition for future comparisons.

In JCR 2008 *Social Science* edition resulted a list of 30 Open Access titles out of 3,801 (1.52%); in JCR 2008 *Sciences* edition resulted a list of 355 Open Access titles out of 6,598 (5.38%). The coverage in 2003-2008 is presented in Table 1 (JCR *Social Sciences* edition) and 2 (JCR *Sciences* edition).

Year	Titles in JCR	Titles in DOAJ 31-12	OA titles with IF	OA titles with IF (%)
2003	1714	602	18	1.05%
2004	1712	1194	19	1.11%
2005	1747	1811	22	1.26%
2006	1768	2357	24	1.36%
2007	1866	2954	32	1.71%
2008	1980	3801	30	1.52%

Tab. 1: Open Access titles in JCR – *Social Sciences* edition.

Year	Titles in JCR	Titles in DOAJ 31-12	OA titles with IF	OA titles with IF (%)
2003	5907	602	87	1.47%
2004	5968	1194	168	2.82%
2005	6088	1811	218	3.58%
2006	6164	2357	259	4.20%
2007	6417	2954	315	4.91%
2008	6598	3801	355	5.38%

Tab. 2: Open Access titles in JCR – *Science* edition

It is to be noticed that the lists of titles are not homogeneous. In JCR 2008 *Science* edition 110 titles were excluded compared to the 2007 edition, including 6 Open Access titles; in JCR 2008 *Social Sciences* 23 titles were excluded, including 3 Open Access titles. In DOAJ, too, there have been variations, and 8 former Open Access titles listed in 2007 were not included as of December 2008.

In JCR 2008 *Science* edition 355 titles have been counted instead of 356 because of the changing title of *Acta Phytotaxonomica Sinica* in *Journal of Systematics and Evolution*. The journal maintained the same ISSN but has no 2008 data. There are also two titles which were assigned to a different category compared to 2007 (*Interciencia* and *Journal of Research of the National Institute of Standards and Technology*).

These tables show the coverage of Open Access journals within Journal Citation Reports. While in the *Science* edition they are represented in a still small but growing percentage, the small number and percentage of titles included in the Social Sciences edition, 1.52%, representing a decrease from 2007, has not been investigated in depth, as the numbers are not sufficient to draw any conclusions. In DOAJ as of December, 31st 2008, at least 533 titles (14%) can be referred to the Social Sciences area. So we have to wait for their inclusion in JCR in the future.

Some more comparisons can be added, in order to clarify the size of the sample: in Ulrichsweb, we find 26,710 active refereed academic/scholarly journals as of March 21st, 2010. Compared to this, the 4,833 Open Access titles listed in DOAJ the same day represent a 18.09%.

4. Open Access journals in Journal Citation Reports: where do they come from?

Focusing on the *Science* edition, the author looked for the geographical distribution of the list of 355 Open Access journals, taking the publisher's country as the point of origin. The results are shown in Table 3.

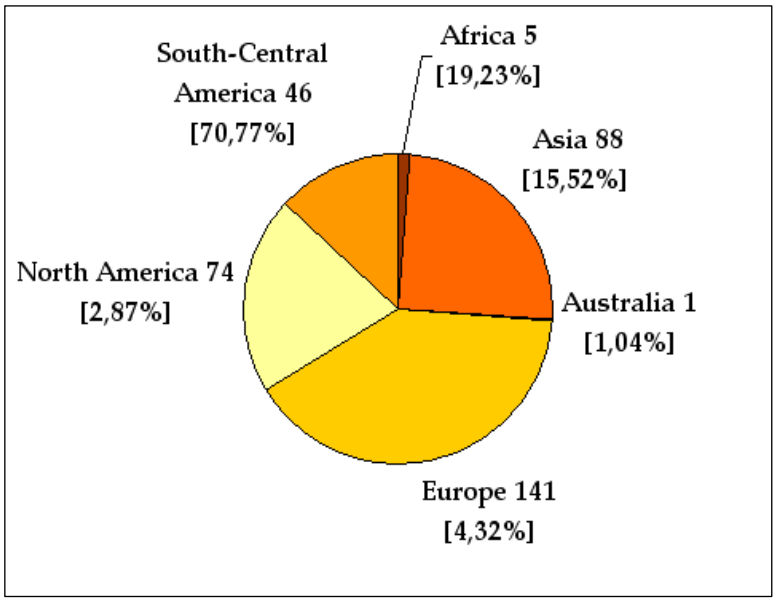

Table 3: Geographical distribution of OA journals in JCR 2008 - *Science* ed.

Ratios generated in the comparison with the geographical distribution of all 6,598 titles in JCR 2008 *Science* edition are shown in Table 4, in association with 2007 data (6,417 titles):

Area	JCR *Science* Titles		OA titles		%		
	2007	2008	2007	2008	2007	2008	Variat.
Africa	24	26	4	5	16.67%	19.23%	+2.56%
Asia	547	567	74	88	13.53%	15.52%	+1.99%

Australia – New Zealand	89	96	1	1	1.12%	1.04%	-0.08%
Europe	3177	3264	118	141	3.71%	4.32%	+0.61%
North America	2529	2580	80	74	3.16%	2.87%	-0.29%
South-Central America	51	65	38	46	74.51%	70.77%	-3.74%
Tot.	6,417	6,598	315	355			

Table 4: Percentages of OA titles by geographical distribution – JCR *Science* ed.

It's important to notice that 70.77% (74.51% in 2007) of covered titles from South-Central America are available as Open Access: this could be a demonstration of the international quality, visibility and reputation of the cited SCiELO platform. The Africa and Asia ratios are also interesting, with a good presence of Open Access journals and a growing trend, while North America, Europe and Australia show lower percentages rates.

5. Open Access journals in Journal Citation Reports: what do they talk about?

Following Mc Veigh's method, the 355 Open Access titles of JCR 2008 *Science* edition have been clustered in 4 disciplinary macro-areas, Chemistry [CH], Mathematics-Physics-Engineering [M-P-E], Life Sciences [LS], Medicine [MED], relating to the category assigned in JCR, as shown in Table 5. Titles referring to two or more categories have been duplicated, so the total amount counted 479 items. In 2007, 315 titles had originated 422 items. The table shows also the growing trend in inclusion of Open Access titles in each macro-area, with the caution, as we said above, that not all the 2007 Open Access titles are still represented in the 2008 edition.

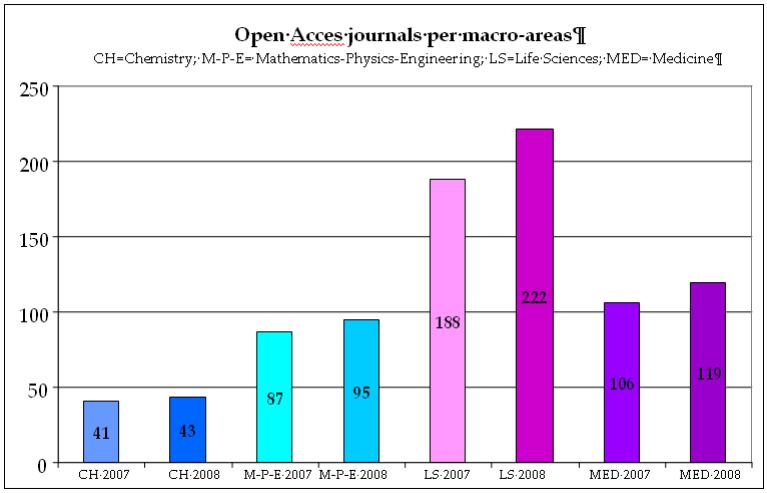

Table 5: OA journals by macro disciplinary areas in JCR *Science* ed.

6. Open Access journals ranking in Journal Citation Reports by Impact Factor

The author then ranked the Open Access titles by Impact Factor.
Impact Factor's values range is widely distributed among the categories: *CA - A cancer journal for clinicians*, an Open Access journal which runs first in its category (Oncology) and which runs also first among all the 6,598 titles, has a 74.575 index value as Impact Factor. *Communications on pure and applied mathematics*, which runs as well first in its category (Mathematics), has a 3.806 index value.

Therefore, in order to obtain comparable data, absolute Impact Factor was not considered. Impact Factor was converted to percentile rank as follows

$$p_n = \frac{100}{N}\left(n - \frac{1}{2}\right)$$

where p is the percentile, N the number of items in a category and n the rank value of the title.

Percentiles 0-10 include the highest Impact Factor values, 91-100 the lower ones.

This is the only analysis carried out on JCR 2008 *Social Science* edition, to have a preliminary benchmark result for future comparisons. There are 30 Open Access titles which, once duplicated because of the pertaining category, generated 37 items. Due to the small size of the sample, no subdivision in categories was performed. Results are shown in synopsis in Table 6. Open Access titles rank in the top fifty percentiles (0-50) with a 54.05% share (20 out of 37).

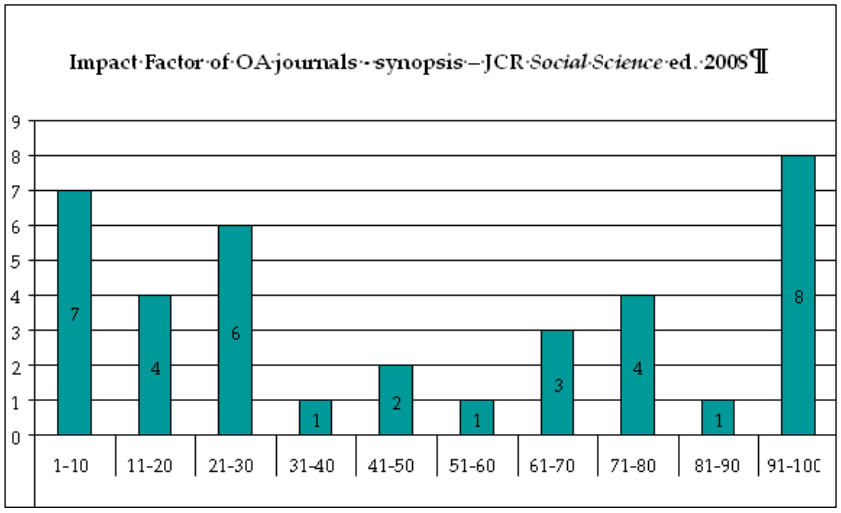

Table 6: OA journals in JCR 2008 *Social Sciences* ed. ranking by Impact Factor (synopsis).

Referring to JCR 2008 *Science* edition, the author then analyzed the 479 Open Access titles, duplicates included.

Percentile rank was first analyzed for each title in its assigned category within JCR: Chemistry [CH]: 43 titles in 15 categories, Mathematics-Physics-Engineering [M-P-E]: 95 titles in 32 categories, Life Sciences [LS]: 222 titles in 46 categories, Medicine [MED]: 119 titles in 31 categories.

Results were then aggregated by disciplinary macro-area, as shown in Tables 7-10, in comparison with 2007 data.

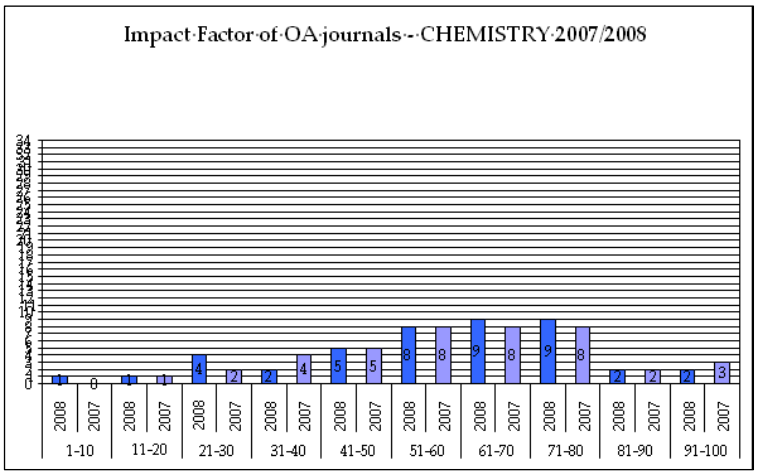

Table 7 Impact Factor of OA journals Chemistry 2007/2008

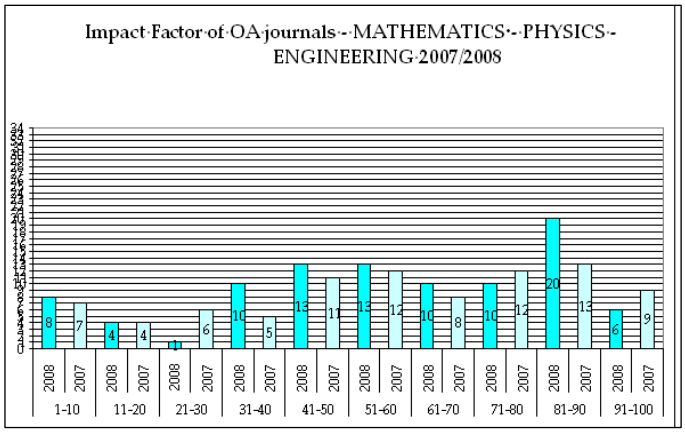

Table 8 Impact Factor of OA journals Mathematics, Physics, Engineering 2007/2008

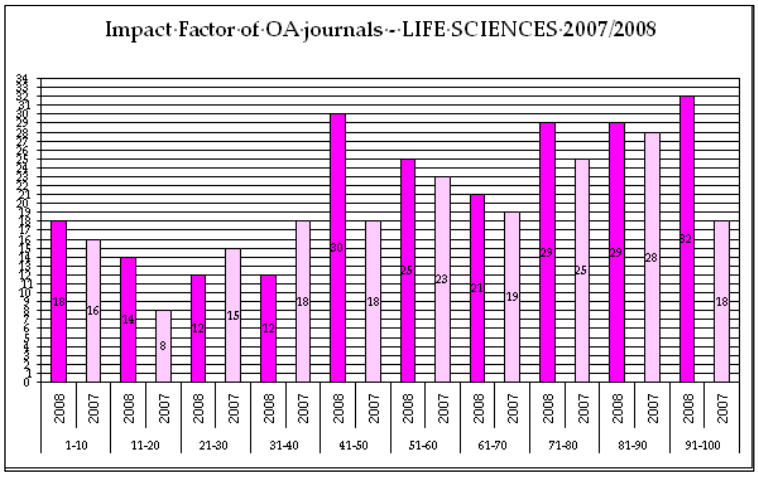

Table 9 Impact Factor of OA journals Life Sciences 2007/2008

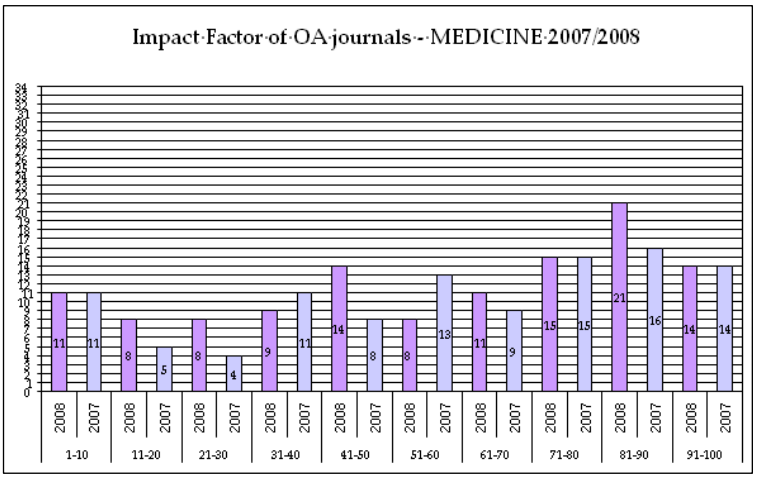

Table 10 Impact Factor of OA journals Medicine 2007/2008

There are as expected strong differences among disciplinary areas. When considering the best performances, in Medicine there is a strong presence in the top twenty (0-20) percentiles (15.96%); slightly lower in Life Sciences and in Mathematics-Physics-Engineering (respectively 14.42% and 12.63%), absolutely lower in Chemistry (4.66%). Data in synopsis are shown in Table 11.

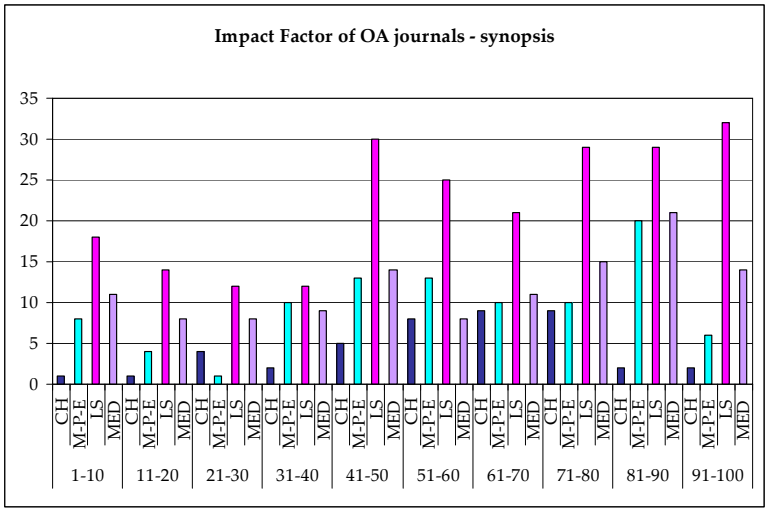

Table 11: OA journals in JCR 2008 *Science* ed. ranking by Impact Factor (synopsis).

In a global outlook, Open Access journals rank in the top fifty percentiles (0-50) with a 38.62% share (185 titles out of 479) when considering Impact Factor, as shown in Table 12. The table also outlines the distribution in each disciplinary macro area: in Medicine, 42.02% titles rank in the top fifty percentiles. 2007 values are included in the table in red.

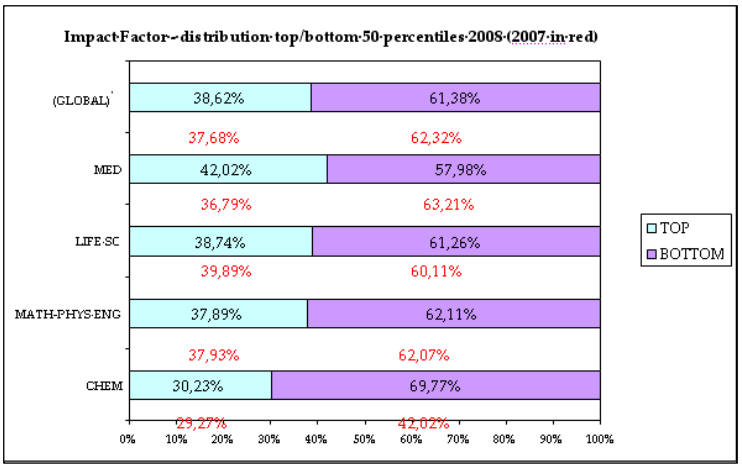

Table 12: distribution top/bottom percentiles in JCR 2008 *Science* ed. (in red 2007 data)

In Fall, 2009, Thomson Reuters released a revised version of JCR 2008. In the *Science* edition, titles became 6,620 (+22). 10 titles out of these 22 are Open Access. Open Access titles moved from 355 to 365, and from 479 to 492 duplicates included. In some cases, wrong assigned Impact Factor values have been rectified. Global data then moved from a 38.62% to a 39.43% share ranking in the top fifty (0-50) percentiles (194 titles out of 492), with a shift from 30.23% to 31.11% in Chemistry, from 37.89% to 39.58% in Mathematic-Physics-Engineering, from 38.74% to 39.04% in Life Sciences, and from 42.02% to 43.09% in Medicine. However, according to the purpose of this study, aimed at future assessments, only the official June 2009 edition has to be considered.

Even though a direct comparison with McVeigh's 2004 data is not possible, as we said above, we can try at least to relate the final results. McVeigh's global data showed in JCR 2002 edition a 34% share in the top fifty (which are 51-100, because she used a different formula) percentiles and a 66% share in the bottom ones [21]. Six years later (according to JCR date of publication), the ratio is 38% [39% in Fall revised edition] against 62% [61%]. It seems to be a little change. But it is to be noticed that the list of 355 titles in JCR 2008 *Science* edition is the whole sample of strictly Open Access journals with Impact Factor, obtained by matching DOAJ and JCR. DOAJ has rigorous selection criteria in defining what an "Open Access journal" is. In 2004, Mc Veigh considered as a source also J-Stage, a Japan gateway which includes simply "free on web" journals [22]. So, McVeigh's sample seems to have been built on wider inclusion criteria: therefore results might be overrated and the resulting gap with JCR 2008 data underestimated. A new study with the same methodology and criteria of the analysis presented in these pages is going to be carried on next JCR 2010 edition, in order to obtain comparable data to set up a trend.

5. Open Access journals ranking in Journal Citation Reports by Immediacy Index

In order to test a potential early advantage, the author then ranked Open Access journals in JCR 2008 *Science* edition by Immediacy Index. Immediacy Index is calculated by dividing the number of citations to articles published in a given year by the number of articles published in the same year. Possible biases within this measure are that frequently issued journals, with articles

published early in the year, had more chances of being cited and that large journals have advantage over small ones: these are cautions notified in JCR itself [23].

Among the 355 Open Access titles, 33% are quarterly, 21% bimonthly, and 17% monthly. 13% have no issues per year declared in JCR, comprising both irregular and e-only titles. Only 3% have 20 or more issues per year.

To obtain comparable data, also Immediacy Index was converted to percentile rank with the same formula: $p_n = \frac{100}{N}(n - \frac{1}{2})$ where p is the percentile, N the number of items in a category and n the rank value of the title.

According to the same methodology applied to Impact Factor values, percentile rank was first analyzed for each title in its assigned category within JCR. Results were then aggregated by disciplinary macro-area.

Global results are shown in Table 13 in comparison with Impact Factor data.

Immediacy Index seems to be higher in the top thirty (0-30) percentiles. In a global outlook, in JCR 2008 *Science* edition Open Access journals rank in the top fifty (0-50) percentiles by Immediacy Index with a 37.16% share (178 titles out of 479), slightly lower than the same year's Impact Factor (-1.46%).

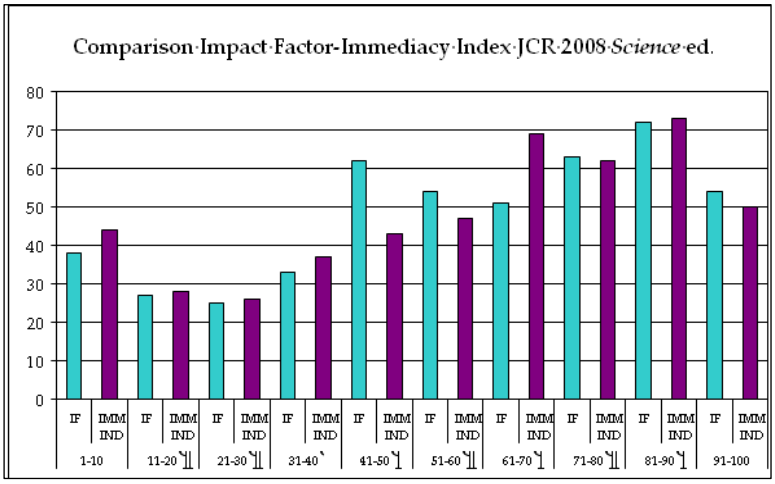

Table 13: Impact Factor compared to Immediacy Index – JCR 2008 *Science* ed.

In 2007, the trend was the opposite: they ranked in the top fifty (0-50) percentiles with a 40.05% share (169 titles out of 422) when considering

Immediacy Index, a 2.37 % higher than Impact Factor (159 titles, 37.68%). Data are collected in Table 14.
It is interesting to notice some cases of many titles which rank low by Impact Factor but high by Immediacy Index. 225 titles out of 479 (47%) show a best performance in Immediacy Index than in Impact Factor (56% in Chemistry 56% in Mathematics-Physics-Engineering, 41% in Life Sciences and 49% in Medicine)

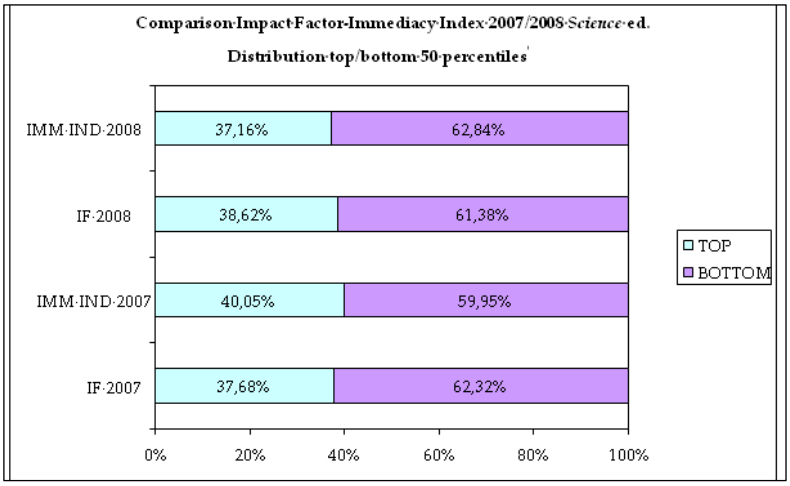

Table 14: Impact Factor to Immediacy Index – global data JCR *Science* ed. 2007/2008

The median value of the difference between the two values is 8, with 104 titles under the median and 121 above. The peaks are represented by *Kyushu Journal of Mathematics* (184th by Impact Factor and 36th by Immediacy Index), *Abstract and Applied Analysis* (116th and 9th), *Boundary value problems* (118th and 14th), *Revista Chilena de Historia Natural* (96th and 8th).

6. A further analysis: 5-year Impact Factor

Considering that one of the most diffused criticisms against Impact Factor is its time span – two years is often a too narrow period to test the impact of a research article, especially in certain disciplines – a new indicator has been provided in JCR starting with the 2007 edition, 5-year Impact Factor. It is

calculated by dividing the number of citations in the JCR year by the total number of articles published in the five previous years.

As with Impact Factor and with Immediacy Index, absolute values of 5-year Impact Factor were converted to percentile rank with the same formula: $p_n = \frac{100}{N}(n - \frac{1}{2})$ where p is the percentile, N the number of items in a category and n the rank value of the title.

According to the same methodology applied to Impact Factor and Immediacy Index values, percentile rank was first analyzed for each title in its assigned category within JCR. Results were then aggregated by disciplinary macro-area.

In 2007 JCR *Science* edition 315 titles out of 422 (75% of the total) have a 5-year Impact Factor. They rank in the top fifty percentiles (0-50) with a 40% share (126 titles out of 315).

In 2008 JCR *Science* edition 356 titles out of 479 have a 5-year Impact Factor (74% of the total). They rank in the top fifty percentiles (0-50) with a 40.45% share (144 titles out of 356). Results are shown in Table 15.

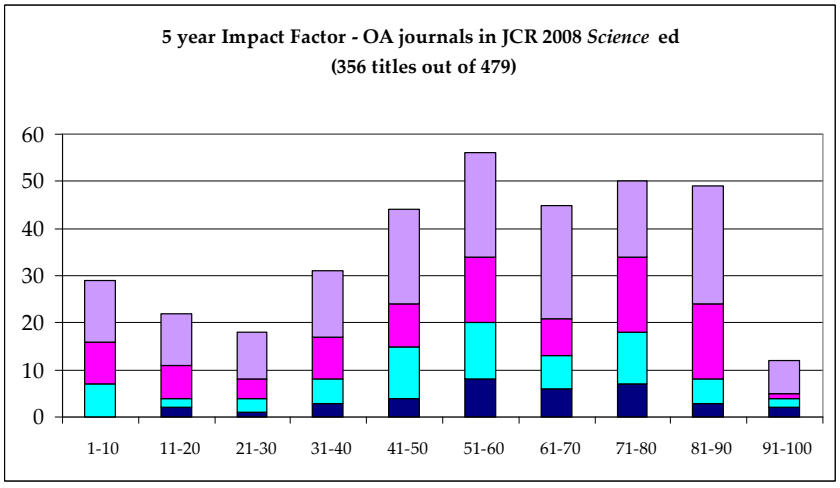

Table 15: 5-year Impact Factor for OA journals JCR 2008 *Science* ed. (only for 356 titles).

7. Open Access journals in Journal Citation Reports: how old are they?

In the asymmetry of the inelastic scholarly communication market, there are prestigious titles with reputations acquired over a period of many years.

Therefore the journal age has been analyzed, in order to find if there might be any correlation between age and performance. Once obtained the splitting into categories and percentiles for JCR 2008 *Science* edition titles, the author tried to collect data in Table 16. Only the first year of publication could have been considered; as known, some journals are Open Access-natives, other are Open Access-converted, so these data are just relative. Although you can access a list of converted titles in Open Access Directory [24], information dates back only to 2006, and the list is not exhaustive; in most cases, it is impossible to establish the year of conversion. However, the author considered the median starting year of publication for journals within their own percentile by Impact Factor rank. At the left and right side of the median year is the number of older and younger/equal titles respectively. Younger/equal titles are in majority.

Percentile	CHEMISTRY	MATH-PYS-ENG	LIFE SCIENCES	MEDICINE
0-10	2001 1	4 1994 4	7 2003 11	5 1999 6
11-20	2001 1	2 1999 2	7 2001 7	3 2001 5
21-30	2 2000 2	1997 1	2 2001 10	3 2000 5
31-40	1 2003 1	5 1997 5	4 2000 8	4 2003 5
41-50	2 1990 3	6 1999 7	13 2000 17	6 2001 8
51-60	3 2000 5	5 1998 8	10 2000 15	4 2002 4
61-70	4 2000 5	5 1997 5	8 1999 13	5 2000 6
71-80	4 2002 5	4 1997 6	10 2000 19	7 1999 8
81-90	1 1998 1	9 1999 11	12 2000 17	6 2000 15
91-100	1 2004 1	3 2003 3	9 2001 23	6 2001 8

Table 16: Open Access journals in JCR 2008 *Science* ed.: median first year of publication.

Distribution is uneven, so that a direct causal relationship between age and visibility and prestige in terms of citations cannot be straightforwardly inferred.

At a glance, lower median years can be found in the top fifty (0-50) percentiles only in Mathematics-Physics-Engineering, where the lowest

percentile corresponds to the most recent median year. In Life Sciences, in the top ten (0-10) percentiles, the median year is 2003, but seven titles were born in 2005 (out of 18). In Medicine, in the top ten (0-10) percentiles there are a 2003, a 2004 and a 2007 title. The last one is *PLoS Neglected tropical diseases*, which ranks first in its first year of tracking.

Thus, there seems to be no strong correlation between the age of a journal and its performance according to Impact Factor. There are some striking examples, such as the cited young PLoS journals which since their first tracking year ranked in the first percentiles – *PLoS Biology* ranked first in its category in its first year, with an Impact Factor quite double over the second in ranking – or such as BioMedCentral *BMC Bioinformatics*, or *Atmospheric Chemistry and Physics*, with its innovative concept of peer-review, always in the first positions of its category [25]. They could be a proof that the pre-reputation period – i.e. the time span requested for a journal to establish in the scholarly publications market – could result shortened in an Open Access environment [26]. Otherwise, the great number of young Open Access journals ranking in the bottom fifty percentiles (51-100) could be a sign of the difficulty of competing with traditional and established titles. More detailed analyses and comparisons with non-Open Access titles trends are due to address the question.

8. Conclusions and further researches

Open Access journals presence in JCR 2008 *Social Sciences* edition (1.52%) is so low that claims, as to now, no more investigations than the simple trend in Impact factor value. These few Open Access journals rank in the top fifty (0-50) percentiles with a 54.05% share.

Open Access journals in JCR 2008 *Science* edition are still represented in a small percentage, even though the large increase since 2003 (from 1.47% to 5.38%).

As for Impact Factor performance, a 38.62% share [39.43% in Fall edition] in the top fifty (0-50) percentiles is a good although not striking result, such as a 37.16% share as for Immediacy Index and a 40.45% as for 5-year Impact Factor (the latter only for 356 titles out of 479).

These results are not outstanding, but they represent only the first step of an ongoing work. A fair discussion should require a comparison with JCR 2010 data, to set a trend which is expected to be highly positive.

The preliminary data reported in this contribution might be useful to further comparisons, more elaborated reflections and in-depth analysis. Further researches might concern the Impact Factor values trend of Open Access journals over several years, in comparison with that of traditional journals, and the performance in terms of Impact Factor of Open Access and traditional titles of the same age.

Open Access journals are relatively new actors in the scholarly publishing market; and gaining reputation and visibility is a complex challenge among established titles. Our collected data, nevertheless, show that the performance of Open Access journals, as tested with the most traditional bibliometric indicator, Impact Factor, is quite good in terms of citations. They can compete with older actors; in other words, as Peter Suber puts it, quality can keep pace with prestige and reputation [27].

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